

CLAIMS

1. Process for cleaning, in particular degreasing or de-oiling, pieces soiled with organic material, by means of a cleaning fluid of which at least a portion circulates in a loop between a washing unit (1) for pieces in which the cleaning fluid is loaded with organic material in contact with the pieces and a processing unit (2) in which living microorganisms biologically degrade the organic material contained in the fluid from the washing unit (1),

which process is characterized in that it consists in subjecting at least a portion of the cleaning fluid circulating in said installation to at least partial sterilization so as to limit or even to eliminate the presence of living microorganisms in the cleaning fluid used in the washing unit (1).

2. Installation for cleaning, in particular degreasing or de-oiling, pieces soiled with organic material by means of a cleaning fluid of which at least a portion circulates in a loop between a washing unit (1) for pieces in which the cleaning fluid becomes loaded with organic material in contact with the pieces, and a processing unit (2) in which the living microorganisms biologically degrade the organic material contained in the fluid from washing unit (1),

characterized in that the installation moreover comprises, in the fluid circulation circuit, means (12) for at least partially sterilizing microorganisms contained in at least one portion of the cleaning fluid.

3. Installation according to claim 2,

characterized in that the means (12) for sterilization of the cleaning fluid are sterilization means by physical mode adapted to produce heat and/or radiation and/or ultraviolet and/or by chemical mode so as to have a bactericidal and/or bacterio-static action on the microorganisms contained in said cleaning fluid.

4. Installation according to one of claims 2 and 3, characterized in that the processing unit (2) traversed by the cleaning fluid from the washing unit (1) comprises at least one processing chamber (2A) filled with a filtering material (3) on which the living microorganisms are immobilized and through which the cleaning fluid circulates.

5. Installation according to claim 4, characterized in that the filtering material (3) moreover contains nutrient elements for the microorganisms, these nutrient elements, preferably constituted by sources other than the carbonated sources, being preferably insoluble or slightly soluble in the cleaning fluid.

6. Installation according to claim 4, characterized in that the processing chamber (2A) of the processing unit (2) within which the cleaning fluid is treated by contact with living microorganisms, communicates with a chamber (2B) for recovery and storage of the fluid from the processing chamber (2A), this chamber (2B) being provided on the one hand with a circuit (5) for recirculation of fluid toward the processing chamber (2A), on the other hand by means (4) for connection with the

washing unit (1) for circulation of the fluid in the direction of the washing unit (1).

7. Installation according to claim 4,

5 characterized in that the processing chamber (2A) of the processing unit (2) within which the cleaning fluid is treated by contact with living microorganisms, communicates with a chamber (2B2) for recovery and storage of the fluid from the first treatment chamber (2A), this chamber (2B2),
10 provided with a circuit (5) for recirculation of fluid toward the treatment chamber (2A), being itself in communication with a supplemental chamber (2B1) constituting an interface of the other chambers of the processing unit with the washing unit, this interface
15 chamber (2B1) comprising means (4) for connection with the washing unit (1) to provide circulation of fluid in the direction of the washing unit (1).

8. Installation according to claim 7,

20 characterized in that the interface chamber (2B1) between the other chambers of the processing unit (2) and the washing unit (1) supplies with fluid the other chambers of the processing unit by means of a de-oiling device (14).

25 9. Installation according to one of claims 6 or 7,

characterized in that the sterilizing means (12) are positioned in the connection between two chambers of the processing unit, in particular in the circuit (5) for recirculation of fluid between the processing chamber (2A)
30 and the chamber (2B, 2B2) for recovery and storage of the fluid from the processing chamber (2A) and/or in the connection means (4) between the processing unit (2) and

the washing unit (1) and/or in one of the chambers of the processing unit (2).

10. Installation according to claim 9,

5 characterized in that the sterilization means (12) are positioned between the processing chamber (2A) and the chamber (2B, 2B2) for recovering storage of fluid processed in the processing unit (2) such that the fluid from the processing chamber (2) reaching the other chamber (2B, 2B2)
10 is sterile.

11. Installation according to one of claims 8 to 10,

characterized in that the processing chamber (2A) of the processing unit (2) is positioned suspended above the
15 chamber (2B, 2B2) for storage of fluid processed in the processing unit (2).

12. Installation according to one of claims 4 to 11,

characterized in that the washing unit (1) is provided
20 with an outlet for the evacuation of fluid in the interior of which is provided the processing chamber (2A) of the processing unit (2).

13. Installation according to one of claims 2 to 7,

25 characterized in that the processing unit (2) is provided with connection means (4) with the washing unit (1) for circulation of the fluid in the direction of the washing unit (1), the sterilization means (12) being positioned in the connection channel between said units (2,
30 1).